Naval Aviation Training Systems

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Training System Stakeholders and Programs

AIR 1.0, NAWC AD/TSD/ WD

CNATT

OPNAV N15/N88/ N43/N2/N6

PEO (A)

PEO (T)

CHIEF OF NAVAL AIR TRAINING

PEO (U&W)

NUWC Keyport/Newport

COMMANDER NAVAL AIR FORCES

DCA

COMMANDER FLEET FORCES COMMAND

TECOM

COMMANDER NAVAL EDUCATION AND TRAINING COMMAND

<u>Sustainment</u>: 800+ training devices supporting 25 platforms in 60 locations

<u>Procurement</u>: 2 ACAT IV, 28 Abbreviated Acquisition Programs (AAPs) and 14 “other” programs

Planning: 20 programs in pre

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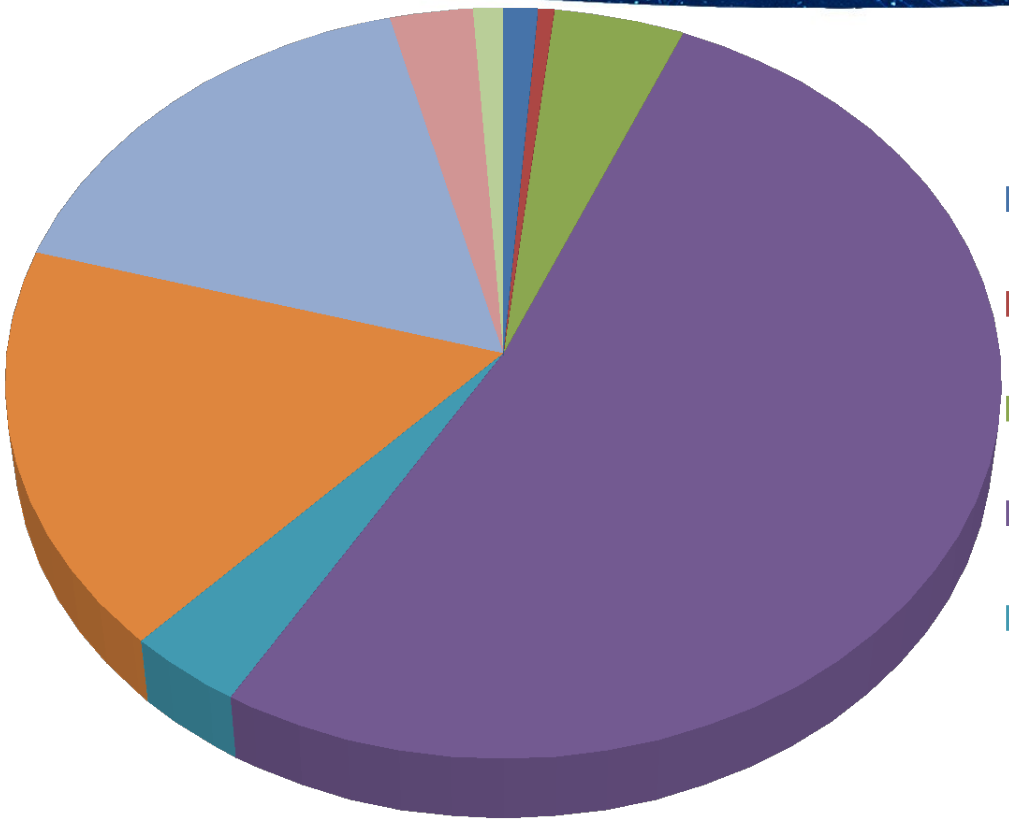
Training Systems Funding*


RDTE Training Range & Instr Dev
RDTE Air Warfare Trng Development
RDTE Tactical Combat Trng System
APN7 Common Ground Equipment
APN7 Tactical Combat Trng System

PMA-205 FY15 Budget Authority: $322M

Total Training System Funding: $[illegible]

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FY15 Strategic Focus Areas

- **Acquisition execution, efficiency, and agility**
- **Open Systems Architectures and Integration**
- **Training Proficiency Optimization and LVC**
- **Cyber Warfare**

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USMC Training Systems

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Overview

FY15 Execution

- H-53E Enhanced Aircrew Externals Trainer
- AV-8B Maintenance Trainer Upgrades
- VH-3D Relocation/Modification and Visual Data Base Upgrade

FY15 Planned

- CH-53E Weapons Systems Trainer (WST) / Aircrew Procedures Trainer (APT) - Trainer Technology Upgrade
- AV-8B Deployable Mission Rehearsal Trainer (DMRT)

Future Requirements / Plans

- Marine Common Aircrew Trainer (MCAT)
- AV-8B Weapons System Trainer (WST) Tech Refresh

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CH-53E WST /APT

Description:

The Trainer Technology Upgrade (TTU) is for the CH-53E WSTs (2F174-S/N 1 & 2) and CH-53E APTs (2F190-S/N 1 & 2).

- S/N 1 Devices are located at MCAS New River, NC.
- S/N 2 Devices are located at MCAS Miramar, CA.
- The TTU will incorporate technology upgrades to maintain high fidelity flight training for CH-53E USMC pilots.

Program Milestones:

Contract - TSC III LOT 2
RFP – 14 Nov. 2014
Proposals Due – 17 Dec. 2014
Contract Award – March 2015

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AV-8B DMRT

Description:

The goal of the DMRT program is to manufacture and deliver training devices that are concurrent with aircraft configuration, thereby replacing the obsolete Multi-Task Trainer (MTT).

The DMRT program will procure deployable AV-8B training systems that can train pilots on radar operation, Hands-On-Throttle-and-Stick (HOTAS), Heads-Up Display (HUD), Multi-Purpose Displays (MPDS) and Control Monitor Set (CMS) operations. The DMRT capabilities are a near-replica of the 2F150 WST, in a small, deployable configuration.

Program Milestones:

- Contract - TSC III LOT II (Restricted to Small Business)
- Request For Proposal – 2nd Qtr FY15
- Contract Award – 4th Qtr FY15
- Fielded by 3rd Qtr FY17

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Future Actions

- MCAT
  - FY16
  - TSC III LOT 1
- AV-8B WST Tech Refresh
  - FY16
  - TSC III LOT TBD

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Tactical Training Ranges

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Overview

FY15 Execution

- Tactical Combat Training Systems (TCTS) Inc I Engineering Change Proposals (ECPs)
  - Block 4 (U.S. Air Force lead)
  - P5JSF Decryption (U.S. Air Force lead)

FY16 Planned

- TCTS Inc I ECPs
  - Block 5 (U.S. Air Force lead)
- TCTS Inc II
  - Development Contract Award (U.S. Navy Lead)

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Tactical Combat Training System (TCTS) Increment II

- TCTS Inc II will provide an improved environment for air combat training with secure air-to-air and air-to-ground data links, encryption, enhanced threat environment and multiple platform interfaces.
- The program will run in 2 phases:
  - **Phase 1:** Engineering and Manufacturing Development + 2 Low-Rate Initial Production (LRIP) options
  - **Phase 2:** Production (to include a base award with options)
- Current acquisition strategy calls for contracts for each phase to be awarded competitively:
  - The Phase 1 contract will include a separately priced Contract Line Item for procurement of production level data and drawing packages, as well as data rights

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TCTS Inc II Future Actions

- Pre-solicitation Conference – 2nd QTR FY15
- Request For Proposal Release – 2nd QTR FY15
- Contract Award – 2nd QTR FY16
- ECP for LVC – FY17
- LRIP 1 – FY20
- LRIP 2 – FY21
- Initial Operating Capability – FY21 (MCAS Cherry Point, NC)

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Air Warfare Training Development

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Overview

Air Warfare Training Development (AWTD)

- Interface between S&T community and PMA205
- Bridges the “Valley of Death” between research projects and training system acquisition programs
  - Manages the PMA205 SBIR/STTR Portfolio
  - Transition sponsor for technologies developed under research programs at ONR, DARPA, etc.

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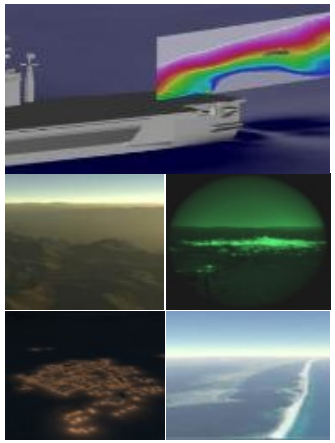
S&T / R&D Focus Areas

Live, Virtual, and Constructive (LVC) Capability

- **Live** – Human Factors of presenting virtual and constructive entities on live avionics
- **Virtual** – Objective methods for quantifying required simulator fidelity
- **Constructive** – Automated generation of large numbers of realistic constructive entities

Training Fidelity Enhancements

- **Realistic SAF Behavior** – Constructive entities that act as though under human control
- **Aerodynamics** – Improved flight models for simulators
- **Visuals** – Improved simulation of out-the-window and sensor scenes
- **Motion Cueing** – Tactile, proprioceptive, and vestibular cues for simulators



Post Mission Assessment

- **Automated Assessment** – Automatic scoring of trainee performance
- **Data Capture** – Compilation of data necessary to enable performance assessment
- **IOS Human Factors** – Enhancements to Instructor Operator Stations to reduce instructor workload and enable improved debrief of training

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Live, Virtual, Constructive (LVC) Training

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Overview

- PMA-205 currently executing multiple AAPs which contribute to an LVC capability
  - Near term, this strategy will continue
- OPNAV currently validating LVC requirements
  - TBD whether future LVC programs will be single ACAT or multiple AAPs

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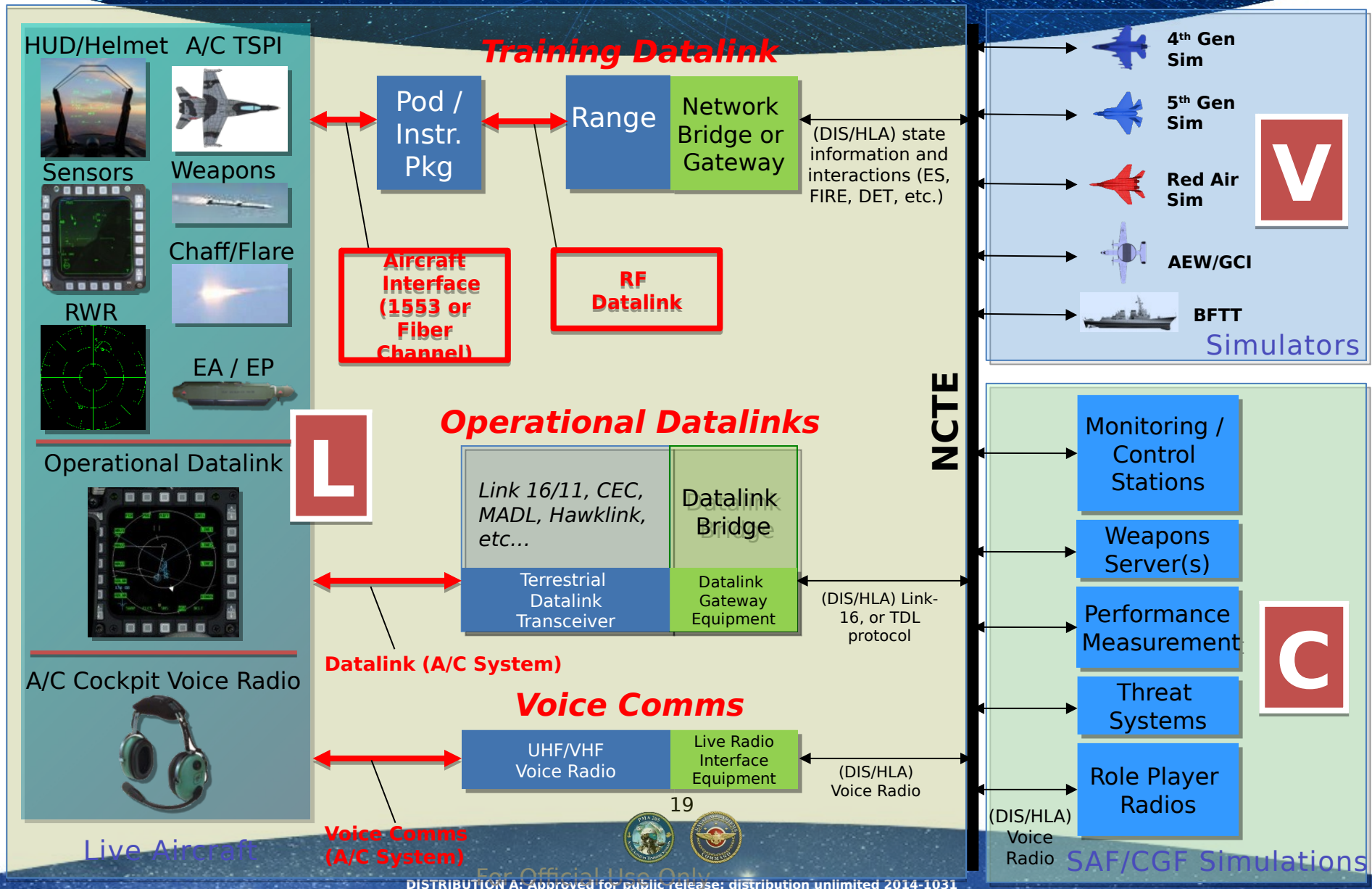
LVC Architecture



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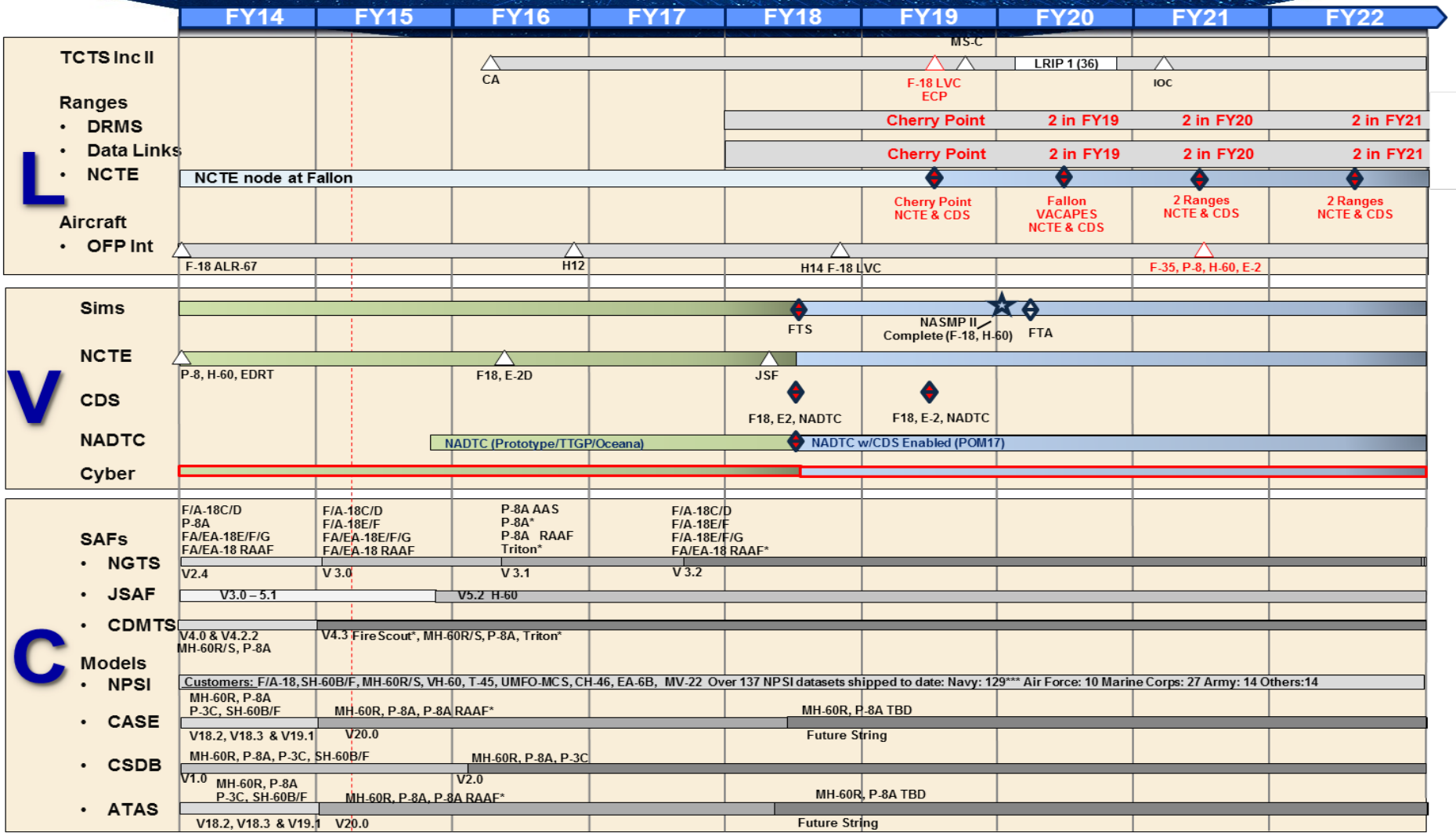
LVC Roadmap



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Future Actions

- Reviewing Open Systems Architecture
  - Goal, minimize OFP changes to incorporate LVC onto displays
- Simulator updates
  - Updates needed to support integrated warfare training across different security domains
- Connect training ranges to VC distributed training

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F/A-18 and EA-18 Training Systems

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Overview

FY15 Execution

- F/A-18E/F and EA-18G HD9 Visual Upgrade
- SAN Disk / Footprint Reduction (SD/FR)
- Operational Flight Program Updates (25X, H10)
- F/A-18C/D Windows 7 Upgrade
- Next Gen Threat Sys (NGTS) v3.0 Integration
- Maintenance Trainer Suite (MTS I/II) Upgrade

Future Requirements / Plans

- NASMP Immersion Fidelity (NIF)
- Fleet Synthetic Training (FST)
- NASMP System Fidelity (NSF) Increment 1-3
- NGTS v3.2 Integration
- Next Generation Jammer (NJG) Integration
- Simulated Aircraft Maintenance Trainer (SAMT) Upgrade

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H-60 Training Systems

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Overview

FY15 Execution
- Technology Refresh & Procurement of Simulators (TRPS)
- Aircraft Virtual Environmental Trainer (AVET)
- Naval Aircrew Training Systems (NATS)

FY15 Planned
- Avionics Maintenance Trainers (AMT) / Weapon Load Trainers (WLT) update (AOP 14/15)
- Courseware update (8a)

Future Requirements / Plans
- Demilitarization (B/F/H)
- Courseware update

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Future Actions

Courseware update

- Description: Long term courseware development contract to maintain configuration with platform.

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P-3 / EP-3 Training Systems

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Summary

FY15 Execution

- P-3 & EP-3 Operational Flight Trainer (OFT) / Tactical Operational Readiness Trainer (TORT) WIN 7 update & Information Assurance compliance

FY15 Planned

- P-3 & EP-3 OFT & TORT Tech Refresh

Future Requirements / Plans

- Demilitarization /Reserve Forces / Foreign Military Sales
- Transition preparation

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P-8A Training Systems

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Overview

FY15 Execution

- Training Software Releases (TSRs 9 and 10)
  - Early Multi-static Active Coherent (eMAC) Fleet integration
  - Next Generation Threat System (NGTS) simulator integration
- NAS Whidbey Island electronic classrooms delivered in mid 2015

FY15 Planned

- Block Modification Contract (multi-year releases)
  - Fidelity improvements and aircraft driven updates
  - Hardware and software obsolesces changes

Future Requirements / Plans

- NAS Whidbey Island device deliveries in early 2016
- Improved acoustic and non-acoustic simulation
  - Eliminate training need for aircraft mission playback through fidelity improvements in sensor and environmental modeling

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FY-15 Block Modification

Description: Sim fidelity upgrades encompassing
four years and five software releases

- NGTS integration (single SAF)- ESM, Link improvements
- CHAT improvements (mIRC, Mako)
- NASMP/NCTE compliance
- AAR aero model integration
- Joint Range Extension Applications Protocol (JREAP)
- Acoustic replay software installation
- 6th workstation installation
- Sim recovery training capability
- Automated performance measurement capability

Status:

- Procurement Planning Conference- **complete**
- Joint Statement Of Work- **Dec ‘14**

First software release scheduled Oct ‘16

Program Milestones:

- Joint RFP development (sole-source)
- Expect Fall ‘15 contract award
- FYs 16-19 releases dates

- Fleet Need Dates:
  - Phase 1 aero model- Oct ‘16
  - Phase 2 aero model- Apr ‘18

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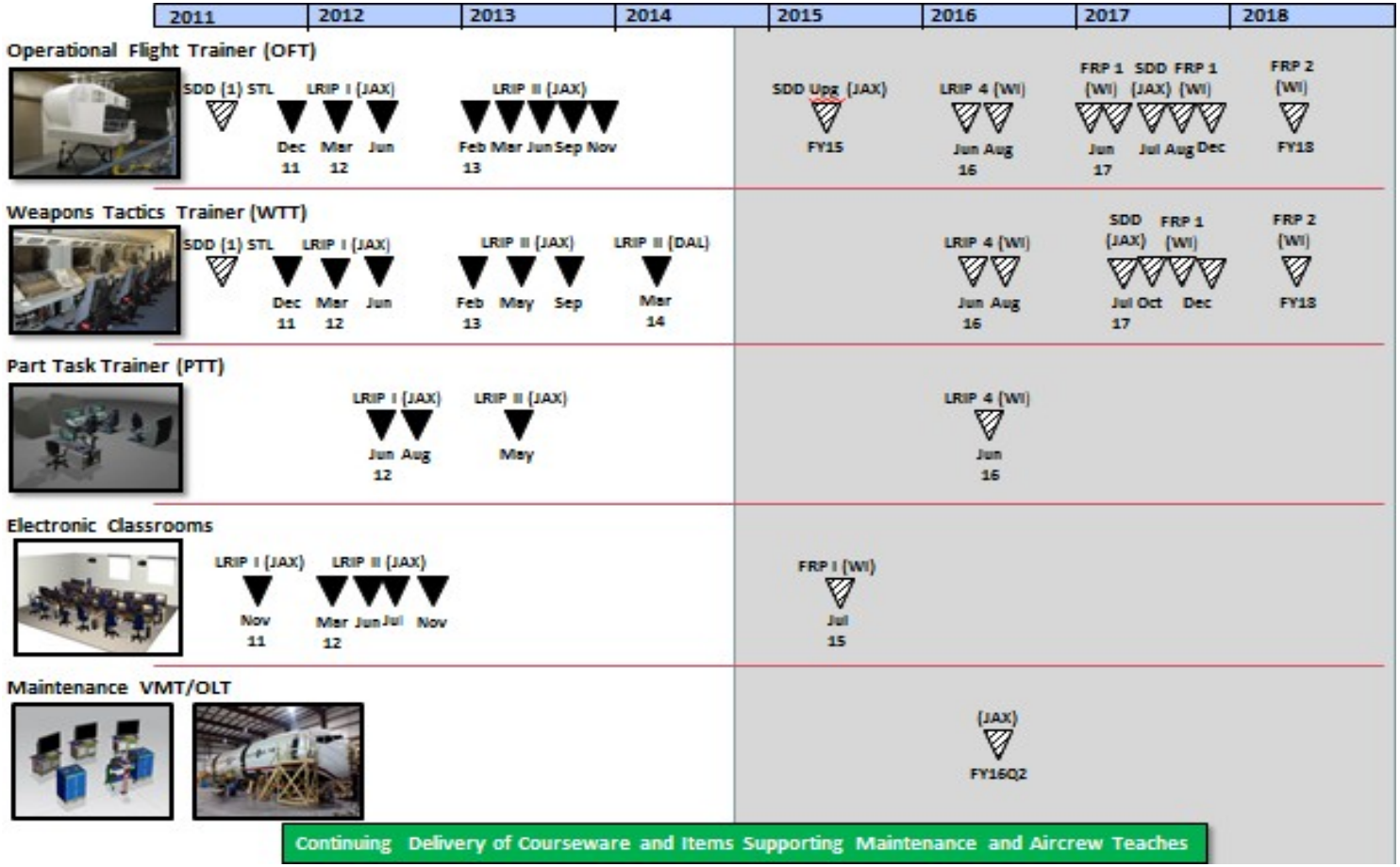
Future Actions

Device Delivery Schedule:



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MQ-4C Training Systems

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Overview

FY15 Execution

- Fleet Readiness Squadron (FRS) Operator Mission System Trainer (MST) 2F230

FY15 Planned

- Electronic Classrooms (Operator & Maintenance)
- Initial Partial Maintenance Trainers

Future Requirements / Plans

- End State Courseware (Operator & Maintenance)
- Remaining Maintenance Trainers

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Future Actions

End State Courseware:

- Operator
  - TBD / 4QFY16
- Maintenance
  - TBD / 3QFY16

Maintenance Trainers:

- Avionics, Mission Control System (MCS)
  - TBD / 1QFY16

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Fire Scout Training Systems

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Overview

FY15 Execution

- Mission Systems Trainer (MST) #2, MQ-8B Avionics Maintenance Trainer (AMT), MQ-8C Front End Analysis (FEA), Mission Control Station (MCS) FEA

FY15 Planned

- MQ-8B Curriculum Updates
- Operator Proficiency Devices

Future Requirements / Plans

- MQ-8C Maintenance Training Devices
- MCS Maintenance Training Devices
- MCS and MQ-8C Maintenance Curricula

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Future Actions

- FY16 competitive contract award: MQ-8C Maintenance Training Devices (avionics and mechanics) procurement
- FY16 competitive contract award: Mission Control Station Training device procurement
- FY16 competitive contract award: MQ-8C maintenance curricula
- FY16 competitive contract award: MCS curriculum

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Unmanned Carrier Launched Airborne Surveillance and Strike (UCLASS) Training Systems

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Overview

Unmanned aircraft system that supports persistent Intelligence, Surveillance, and Reconnaissance and strike capabilities that will enhance the versatility provided by an aircraft carrier

- **ACAT1 Pre-Milestone/Pre-Source Selection**
- **Initial Training System Supports Early Operational Capability**

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UCLASS Training

Familiarization (FAM) Training

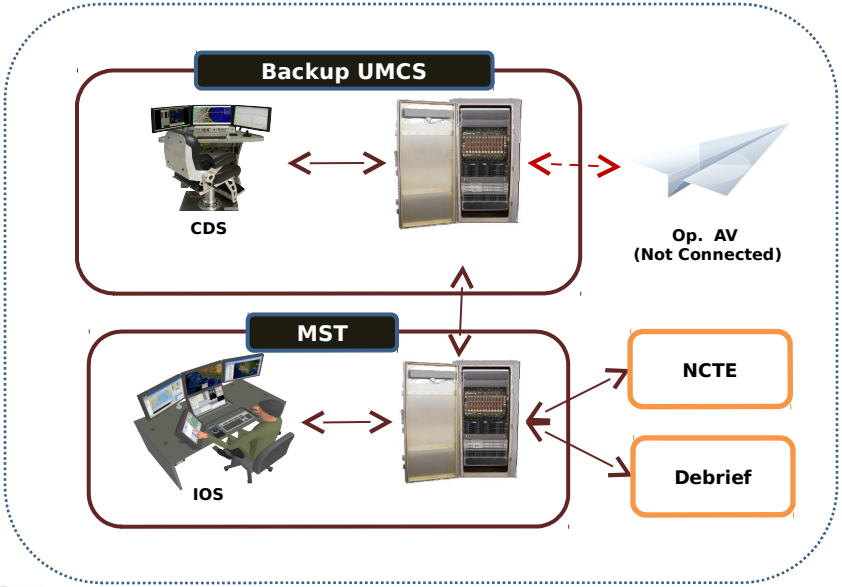
- Informal (i.e. over the shoulder/intro training)
- Prepares personnel for discrete functions:
  - System Engineering
  - Developmental and Operational Test
  - Fleet Introduction Team Cadre Instructors

Instructor Led Training

- Blended classroom and lab instruction
- Capstone training that prepares students for EOC deployments
- Built using Instructional Systems Design and Front End Analysis
- Scoped to Transition Training (CAT II Syllabus)

Mission Systems Trainer

- Compliments aircrew ILT classroom sessions
- Appended to the UCLASS Mission Control System (UMCS) to provide a Training Mode
- Includes air vehicle and threat models, instructor operator station and synthetic environment,
- Capable of supporting mission rehearsal, crew readiness training, fleet synthetic and joint mission training



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Future Actions

Courseware

- Description: UMCS Training Master Task List, UMCS FAM, and Automated Data Network System Job Duty Task Analysis development
- Execution: Present through 4QFY15

MST

- Description: UMCS Training Mode and Navy Continuous Training Environment analysis
- Execution: Present through 2QFY18

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